

CLAIMS

What is claimed is:

1. A method for providing metadata within a Unicode character streams said metadata describing information necessary for accurate display rendering of the character stream, said method comprising the steps of:
 - inserting one or more metatags into a Unicode character stream by spelling the tag identifier; and
 - inserting a metatag separator between multiple metatags if more than one metatag has been inserted, so as to create a modified character stream having separator-delimited metadata embedded within it.
2. The method as set forth in Claim 1 further comprising the steps of:
 - inserting one or more parameters following at least one metatag with which it is associated; and
 - inserting a parameter separator between multiple parameters associated with a metatag if more than one parameter has been inserted so as to create a separator-delimited parameter list following a metatag.
3. The method as set forth in Claim 1 wherein said step of inserting one or more metatags into a Unicode character stream comprises inserting an element metatag describes zero width joiner and zero width non joiner characters, such that multiple

characters may be grouped together for treatment as a single grapheme or text element.

4. The method as set forth in Claim 2 wherein said step of inserting one or more metatags comprises inserting a paragraph metatag, and wherein said step of inserting
5 one or more parameters comprises inserting a right-to-left or a left-to-right directional parameter following a paragraph metatag which indicate a direction in which the character stream following the paragraph metatag and parameter is to be rendered for display.

5. The method as set forth in Claim 2 wherein said step of inserting one or more
10 metatags comprises inserting a direction metatag, and wherein said step of inserting one or more parameters comprises inserting a right-to-left or a left-to-right directional parameter following a direction metatag which indicate a direction in which the character stream following the direction metatag and parameter is to be rendered for display.

15 6. The method as set forth in Claim 5 wherein said steps of inserting one or more metatags and inserting one or more parameters following metatags comprise the steps of replacing hyper text markup language bi-directional output (BDO) tags with said direction metatags and directional parameters.

7. The method as set forth in Claim 2 wherein said step of inserting one or more metatags comprises inserting a mirror metatag which indicates the characters following the mirror metatag is to be presented in mirror fashion.

8. The method as set forth in Claim 2 wherein said step of inserting one or more
5 metatags comprises inserting a math metatag and a language metatag such that portions of the character stream which represent mathematical expressions are delimited from portions of the character stream which represent language.

9. A computer readable medium encoded with software causing a computer to perform the following actions for embedding display rendering metadata into
10 character streams:

insert one or more metatags into a Unicode character stream by spelling the tag identifier; and

insert a metatag separator between multiple metatags if more than one metatag has been inserted, so as to create a modified character stream having
15 separator-delimited metadata embedded within it.

10. The computer readable medium as set forth in Claim 9 further comprising software for performing the following actions:

insert one or more parameters following at least one metatag with which it is associated; and

insert a parameter separator between multiple parameters associated with a metatag if more than one parameter has been inserted so as to create a separator-delimited parameter list following a metatag.

11. The computer readable medium as set forth in Claim 9 wherein said software
5 for inserting one or more metatags into a Unicode character stream comprises software for inserting an element metatag describes zero width joiner and zero width non joiner characters, such that multiple characters may be grouped together for treatment as a single grapheme or text element.
12. The computer readable medium as set forth in Claim 10 wherein said software
10 for inserting one or more metatags comprises software for inserting a paragraph metatag, and wherein said software for inserting one or more parameters comprises software for inserting a right-to-left or a left-to-right directional parameter following a paragraph metatag which indicate a direction in which the character stream following the paragraph metatag and parameter is to be rendered for display.
- 15 13. The computer readable medium as set forth in Claim 10 wherein said software for inserting one or more metatags comprises software for inserting a direction metatag, and wherein said software for inserting one or more parameters comprises software for inserting a right-to-left or a left-to-right directional parameter following a

direction metatag which indicate a direction in which the character stream following the direction metatag and parameter is to be rendered for display.

14. The computer readable medium as set forth in Claim 13 wherein said software for inserting one or more metatags and inserting one or more parameters following
- 5 metatags comprise software for replacing hyper text markup language bi-directional output (BDO) tags with said direction metatags and directional parameters.
15. The computer readable medium as set forth in Claim 9 wherein said software for inserting one or more metatags comprises software for inserting a mirror metatag which indicates the characters following the mirror metatag is to be presented in
- 10 mirror fashion.
16. The computer readable medium as set forth in Claim 9 wherein said software for inserting one or more metatags comprises software for inserting a math metatag and a language metatag such that portions of the character stream which represent mathematical expressions are delimited from portions of the character stream which
- 15 represent language.
17. A system for embedding metadata within a Unicode character stream, said metadata describing information necessary for accurate display rendering of the character stream, said system comprising:

a metatag inserter for inserting one or more metatags into a Unicode character stream by spelling the tag identifier; and

a tag separator inserter for inserting a metatag separator between multiple metatags if more than one metatag has been inserted, which creates a modified character stream having separator-delimited metadata embedded within it.

18. The system as set forth in Claim 17 further comprising:

a parameter inserter for inserting one or more parameters following at least one metatag with which it is associated; and

a parameter separator inserter for inserting a parameter separator between multiple parameters associated with a metatag if more than one parameter has been inserted, which creates a separator-delimited parameter list following a metatag.

19. The system as set forth in Claim 17 wherein said metatag inserter is adapted to insert an element metatag which describes zero width joiner and zero width non joiner characters, such that multiple characters may be grouped together for treatment as a single grapheme or text element.

20. The system as set forth in Claim 18 wherein said metatag inserter is adapted to insert a paragraph metatag, and wherein said parameter inserter is adapted to insert a right-to-left or a left-to-right directional parameter following a paragraph metatag

which indicate a direction in which the character stream following the paragraph metatag and parameter is to be rendered for display.

21. The system as set forth in Claim 18 wherein said metatag inserter is adapted to insert a direction metatag, and wherein said parameter inserter is adapted to insert a
5 right-to-left or a left-to-right directional parameter following a direction metatag which indicate a direction in which the character stream following the direction metatag and parameter is to be rendered for display.

22. The system as set forth in Claim 21 wherein said metatag inserter and said parameter inserter are adapted to replace hyper text markup language bi-directional
10 output (BDO) tags with said direction metatags and directional parameters.

23. The system as set forth in Claim 18 wherein said metatag inserter is adapted to insert a mirror metatag which indicates the characters following the mirror metatag is to be presented in mirror fashion.

24. The system as set forth in Claim 18 wherein said metatag inserter is adapted to
15 insert a math metatag and a language metatag such that portions of the character stream which represent mathematical expressions are delimited from portions of the character stream which represent language.